

Claims

What is claimed is:

1. A medical device for removing clots from a blood vessel, comprising:
an elongate shaft having a distal end;
a first strut having a first end attached to the shaft, a first loop region, and a second end coupled to the shaft;
a second strut having a first end attached to the shaft, a second loop region, and a second end coupled to the shaft; and
wherein the first and second loop regions overlap with one another and are disposed about the shaft.
2. The medical device of claim 1, wherein the first end of the first strut is the proximal end of the first strut and the first end of the second strut is the proximal end of the second strut, when the proximal end of the first strut and the proximal end of the second strut are fixedly attached to the shaft.
3. The medical device of claim 2, wherein the proximal end of the first strut and the proximal end of the second strut are fixedly attached to the shaft by winding the proximal ends about the shaft.
4. The medical device of claim 1, wherein the second end of the first strut is the distal end of the first strut, wherein the distal end of the first strut is slidably disposed along the shaft.

5. The medical device of claim 4, wherein the distal end of the first strut is attached to a tubular member disposed over the shaft.
6. The medical device of claim 5, wherein the distal end of the second strut is attached to the tubular member.
7. The medical device of claim 1, further comprising a third strut having a proximal end attached to the shaft, a third loop region, and a distal end coupled to the shaft.
8. The medical device of claim 7, wherein the third loop region overlaps with the first loop region, the second loop region, or both.
9. The medical device of claim 7, wherein the distal end of the third strut is slidably disposed along the shaft.
10. The medical device of claim 1, wherein the first and second loop versions are circumferentially disposed about the shaft.
11. A medical device for removing clots from a blood vessel, comprising:
an elongate shaft;

one or more strut members each having a first end fixedly attached to the shaft and a second end slidably attached the shaft; and

wherein each of the one or more strut members have a loop region extending circumferentially around at least a portion of the shaft and a distally-extending region adjacent the loop region and extending distally therefrom.

12. The medical device of claim 11, wherein the loop regions of the one or more strut members circumferentially overlap.

13. The medical device of claim 11, wherein the proximal ends of the one or more strut members are fixedly attached to the shaft by winding the proximal ends about the shaft.

14. The medical device of claim 11, wherein the distal ends of the one or more strut members are attached to a tubular member disposed over the shaft.

15. A clot removing device, comprising:
an elongate shaft having a distal end;
a clot capturing assembly coupled adjacent the distal end of the shaft, the assembly including a plurality of struts;
wherein each of the struts include a proximal end attached to the shaft, a loop region, and a distal end slidably disposed along the shaft; and

wherein the loop regions of the struts define a mouth region of the assembly, the mouth region being substantially concentric with the shaft.

16. The clot removing device of claim 15, wherein the distal ends of the struts are attached to a tubular member slidably disposed over the shaft.

17. The clot removing device of claim 15, wherein the clot capturing assembly includes three struts.

18. The clot removing device of claim 15, wherein the looped regions of the struts circumferentially overlap with one another.

19. A method for removing blood clots from a blood vessel, comprising the steps of:

providing a clot pulling device including an elongate shaft having a distal end, a clot capturing assembly coupled to the shaft, the assembly including a plurality of struts, wherein each of the struts include a proximal end attached to the shaft, a loop region, and a distal end slidably disposed along the shaft, and wherein the loop regions of the struts define a mouth region of the assembly, the mouth region being substantially concentric with the shaft;

providing a catheter having a lumen extending therethrough;

advancing the catheter through a blood vessel to a location adjacent an area of interest;

collapsing the clot capturing assembly;
advancing the clot pulling device through the lumen of the catheter to a position distally of the area of interest and expanding the clot capturing assembly; and
entrapping a clot within the clot capturing assembly.

20. The method of claim 19, wherein the step of collapsing the clot capturing assembly includes distally shifting the distal ends of the struts.

21. The method of claim 19, wherein the step of advancing the catheter through a blood vessel to a location adjacent an area of interest includes disposing the clot pulling device in the lumen and advancing the catheter and clot pulling device through the blood vessel.

22. A method for removing blood clots from a blood vessel, comprising the steps of:

providing a clot pulling device including an elongate shaft having a distal end, a clot capturing assembly coupled to the shaft, the assembly including a plurality of struts, wherein each of the struts include a proximal end attached to the shaft, a loop region, and a distal end slidably disposed along the shaft, and wherein the loop regions of the struts define a mouth region of the assembly, the mouth region being substantially concentric with the shaft;

providing a catheter having a lumen extending therethrough;

collapsing the clot capturing assembly;

disposing the clot pulling device within the lumen of the catheter;
advancing the catheter and the clot pulling device through a blood vessel to a location adjacent an area of interest;
proximally retracting the catheter relative to the clot pulling device;
expanding the clot capturing assembly; and
entrapping a clot within the clot capturing assembly.

23. The method of claim 22, wherein the basket is self expanding so that the steps of proximally retracting the catheter relative to the clot pulling device and expanding the clot capturing assembly are combined into a single step.